

Chapter 27½

STORMWATER MANAGEMENT

Editor's note - Ordinance No. 88-60 contained two sections designated as Section 3; hence, beginning with the second Section 3, the sections were renumbered as sections 4 through 8. Ordinance No. 04-O-69, adopted 12-09-04, replaced Chapter 27½ in its entirety.

[Cross references - Ch. 7, buildings; Ch. 22, Planning Commission; Ch. 29, subdivisions, maps and plats; Ch. 33, water and sewers.]

ARTICLE I. STORMWATER MANAGEMENT

SECTION 27½-1 PURPOSE.

This chapter is intended to manage the manner in which stormwater is addressed in areas of new development and redevelopment through the course of construction, ~~and~~ post-construction stabilization, and permanently to maintain or benefit water quality, to provide measures against stream bank erosion and flooding, and thereby to benefit the quality of life and character of the City. This chapter sets general policy and stormwater management program direction and is supported and enforced through other more detailed regulations, which may be adopted by the City Council and relevant City departments.

This chapter shall be known and may be cited as the Stormwater Management Ordinance of the City. The purpose of this chapter is to accomplish the following:

- (A) Improve stormwater management;
- (B) Control the discharge of pollutants to the stormwater system;
- (C) Provide measures against stream bank erosion and flooding;
- (D) Improve public safety;
- (E) To comply with the City's NPDES permit; and,
- (F) Allow the City to exercise the powers granted in T.C.A. §68-221-1105, which provides that, among the other powers municipalities have with respect to stormwater facilities, is the power by ordinance or resolution to:
 - (1) Exercise general regulation over the planning, location, construction, and operation and maintenance of stormwater facilities in the City, whether or not owned and operated by the City;
 - (2) Adopt any rules and regulations deemed necessary to accomplish the purposes of this statute, including the adoption of a system of fees for services and permits;
 - (3) Establish standards to regulate the quantity of stormwater discharged and to regulate stormwater contaminants as may be necessary to protect water quality;
 - (4) Review and approve plans and plats for stormwater management in proposed subdivisions or commercial developments;
 - (5) Issue permits for stormwater discharges, or for the construction, alteration, extension, or repair of stormwater facilities;

- (6) Suspend or revoke permits when it is determined that the permittee has violated any applicable ordinance, resolution, or condition of the permit;
- (7) Regulate and prohibit discharges into stormwater facilities of sanitary, industrial, or commercial sewage or waters that have otherwise been contaminated; and,
- (8) Expend funds to remediate or mitigate the detrimental effects of contaminated land or other sources of stormwater contamination, whether public or private.

[Ord. No. 88-60 §1, 12-15-88; Ord. No. 04-O-69 §1, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27½-2 DEFINITIONS.

For the purpose of this chapter, unless specifically defined below, words or phrases shall be interpreted so as to give them the meaning they have in common usage and to give this chapter its most effective application. Words in the singular shall include the plural, and words in the plural shall include the singular. Words used in the present tense shall include the future tense. The word “shall” connotes mandatory and not discretionary; the word “may” is permissive. The following definitions shall apply in the interpretation of this chapter and in any regulations promulgated hereunder, unless specifically stated otherwise:

100-year flood event. See Base Flood.

Active channel. The area of the stream channel that is subject to frequent flows (approximately once per one and one half (1½) years) and that includes the portion of the channel below where the floodplain flattens.

Appeal. A request for a review of the City’s interpretation of any provision of these regulations.

Base flood. The flood having a one percent (1%) chance of being equaled or exceeded in any given year; for the City the base flood is the 100-year frequency flood. While this statistical event may occur more frequently, it may also be known as the “100-year flood event.”

Best Management Practice (BMP). This may refer collectively or specifically to a structural or non-structural practice intended to address water quantity or quality as best available.

Board. A City board or committee specifically designated by the City Council to perform one or more functions under this chapter. Such functions may include: approving policies, rules, guidelines, plans or agreements; hearing appeals of administrative decisions; determining exemptions; or, granting waivers or variances. If no other City board or committee has been so specifically designated, the Construction Board of Adjustments and Appeals shall be deemed the Board. ~~The Construction Board of Adjustments and Appeals of the City.~~

Bridge. A man-made conveyance over stormwater flows.

Building. Any structure built for support, shelter, or enclosure for any occupancy or storage.

Channel. A natural or artificial watercourse of perceptible extent, with definite bed and banks to confine and conduct continuously or periodically flowing water. Channel flow is that water which is flowing within the limits of the defined channel.

City. The City of Murfreesboro, Tennessee.

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City Engineer. The person employed as the City Engineer for the City or the person designated by the City Engineer with the approval of the City Manager to perform the duties assigned to the City Engineer under this chapter.

Construction Board of Adjustments and Appeals. Board identified to hear appeals of decisions, determinations, orders and notices of the City with regards to violations of this chapter, and to establish rules for its own procedures.

Culvert. A man-made conveyance of stormwater flows. This may include a pipe or other constructed conveyance.

Critical area. A site subject to erosion or sedimentation as a result of cutting, filling, grading, or other disturbance of the soil; a site difficult to stabilize due to exposed subsoil, steep slope, extent of exposure, or other conditions.

Cut. Portion of land surface or area from which earth has been removed or will be removed by excavation; the depth below original ground surface to the excavated surface.

Designated City staff. Any City staff person having suitable identification who enters onto property with the intent to inspect private drainage systems or to conduct sampling and/or metering of stormwater operations or discharges.

Detention. The temporary delay of storm runoff prior to discharge into receiving waters.

Development. Any man-made change to improved or unimproved real estate, including but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, or permanent storage of materials (defined as materials of like nature stored in whole or in part for more than six months).

Drainage basin. A part of the surface of the earth that is occupied by, and provides surface water runoff into, a stormwater management system (MS4 or Waters of the State), which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Drip line. A vertical line extending from the outermost edge of the tree canopy or shrub branch to the ground.

Engineer. An engineer duly registered, licensed or otherwise authorized by the State of Tennessee to practice in the field of civil engineering.

Erosion. The disintegration or wearing away of soil by the action of water in the form of flowing water or precipitation impact.

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Erosion Prevention (EP). Practices implemented to prevent, through shielding, binding or other mechanism(s), the suspension of soil particles, often associated with erosion prevention and sedimentation control.

Erosion prevention and sediment control plan. A plan accurately describing the potential for soil erosion and sedimentation problems resulting from land disturbing activity and explanations and illustrations of the measures that are to be taken to control these problems.

Excavation. See Cut.

Federal Emergency Management Agency (FEMA). The agency established by the federal government to mitigate the effects of various catastrophic occurrences including damages from floods, erosion and mudslides.

Federal Emergency Management Agency (FEMA) Maps. Maps prepared by the Federal Emergency Management Agency to define flood areas for flood frequency intervals with the base flood being a 100-year frequency which maps are hereby incorporated into and made a part of this chapter.

Fill. Portion of land surface or area to which soil, rock, or other materials have been or will be added; height above original ground surface after the material has been or will be added.

Flood or flooding. Water from a river, stream, watercourse, lake, or other body of standing water that temporarily overflows and inundates adjacent lands and which may affect other lands and activities through increased surface water levels and/or increased groundwater level.

Flood Hazard Boundary Map (FHBM). An official map of the City, issued by the Federal Insurance Administration where the boundaries of the areas of special flood hazard have been designated as Zone A.

Flood Insurance Rate Map (FIRM). An official map of the City, on which the Federal Insurance Administration has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

Floodplain. The relatively flat or lowland area adjoining a river, stream, watercourse, lake, or other body of standing water which has been or may be covered temporarily by floodwater. For purposes of this chapter, the floodplain is defined as the area that would be inundated by high water at the flood profile from which the flood protection elevation is established.

Flood protection elevation. The elevation which is one foot above the 100-year flood high water profiles according to FEMA maps developed for the Federal Flood Insurance Study for the City. The flood protection elevation is the crest elevation in relation to mean-sea-level (National Geodetic Vertical Datum - NGVD) expected to be reached during a flood which encompasses the regulatory or 100-year floodplain.

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Floodproofing. A combination of structural provisions, changes, or adjustments to properties and structures subject to flooding primarily for the reduction or elimination of flood damages to properties, water and sanitary facilities, structures, and contents of buildings in a flood hazard area.

Floodway. That portion of the stream channel and adjacent floodplain required for the passage or conveyance of a 100-year flood discharge. The floodway boundaries are placed to limit encroachment in the floodplain so that a 100-year flood discharge can be conveyed through the floodplain without materially increasing (less than one foot) the water surface elevation at any point and without producing hazardous velocities or conditions. This is the area of significant depths and velocities and due consideration should be given to effects of fill, loss of cross sectional flow area, and resulting increased water surface elevations.

Floodway fringe. That portion of the floodplain lying outside the floodway. This is the area of the floodplain that may be developed or encroached upon as long as the water surface elevation of the 100-year flood is not increased by more than one foot at any point.

Floor. The top surface of an enclosed area in a building (including basement), i.e., top of slab in concrete slab construction or top of wood flooring in wood frame construction. The term does not include the floor of a garage used solely for parking vehicles.

Grading. Any operation or occurrence by which the existing site elevations are changed; or where any ground cover, natural or man-made, is removed; or any watercourse or body of water, either natural or man-made, is relocated on any site, thereby creating an unprotected area. This includes stripping, cutting, filling, stockpiling, or any combination thereof, and shall apply to the land in its cut or filled condition.

Greenway. A linear open space established along a natural or constructed corridor (e.g. stream, river or railroad) which is designed to connect recreational areas with cultural or historic features and/or populated areas for pedestrian and/or bicycle traffic. A greenway is developed and maintained to provide protection of natural resources, transportation alternatives, and recreational opportunities. A greenway may include associated amenities (e.g. interpretive markers, canoe launching areas, and trailhead facilities such as buildings, picnic areas and playgrounds) with the linear pathway.

Hot spot (priority area). An area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

Hydrologic and hydraulic study. Engineering study to determine rates, volumes, and distribution of storm runoff.

Human occupancy. Any portion of any enclosed structure wherein humans principally live or sleep such as mobile homes, permanent residential activities, semi-transient residential activities, health care community facilities, nursing home community facilities, orphanages, family care facilities, group care facilities or transient habitation.

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Impervious surface. A term applied to any ground or structural surface that water cannot penetrate or through which water penetrates with great difficulty.

Intent to build. Any plan brought before the City that indicates a man-made change to improve real estate by the addition of buildings or other structures.

Land disturbance activity. Any operation or occurrence by which the existing site elevations are changed; or where any ground cover, natural or man-made, is removed; or any watercourse or body of water, either natural or man-made, is relocated on any site, thereby creating an unprotected area. This includes stripping, cutting, filling, stockpiling, or any combination thereof, and shall apply to the land in its cut or filled condition. The phrase land disturbing activity has the same meaning as land disturbance activity.

Land disturbance permit. A permit required from the City in certain circumstances of land disturbing activity, as set forth in Code §27½-5.

Major drainage system. That storm drainage system which carries the runoff from a 100-year frequency storm. Although damage may occur, runoff will be carried by the major system whether or not it has been planned and designed, and whether or not improvements are situated wisely in respect to it. The major system usually includes many features such as streets, gulches, and major drainage channels. Storm sewer systems may reduce the flow in many parts of the major system by storing and transporting water underground. Good planning and designing of a major system should eliminate major damage and loss of life from storms having a one percent (1%) chance of occurring in any given year.

Managed vegetation. Management that does not involve grubbing, clearing, tilling, disking or plowing of the ground. Cutting, mowing, pruning, no-till planting, and aeration are allowed activities of managed vegetation.

Materially increase the degree of flooding. Shall be defined by the following criteria:

- (A) The proposed development raises the 100-year flood elevation more than one foot; or, when considered in conjunction with other potential developments within the watershed, would contribute disproportionately to increased flooding which when combined with other potential development would cumulatively increase the 100-year flood elevation more than one foot.
- (B) The proposed development does materially increase the property damage caused by the 100-year flood.
- (C) The proposed development conflicts with the engineer's determination of factors required for reducing flood damage.

Minor drainage system. That storm drainage system which is frequently used for collecting, transporting, and disposing of snow-melt, miscellaneous minor flows, and storm runoff up to the capacity of the system. The capacity should be equal to the maximum rate of runoff to be expected from the initial design storm which has statistical frequency of occurrence of once in ten years, or as specified by the Engineering Department. The minor system is sometimes

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termed the “convenience system,” “initial system,” or the “storm sewer system.” The minor system may include many features ranging from curbs and gutters to storm sewer pipes and open drainage ways.

Municipal Separate Storm Sewer System (MS4). The portion of public infrastructure that is not considered “Waters of the State.” Usually MS4 refers to wet-weather conveyances while “Waters of the State” usually refer to dry-weather conveyances. This determination is made by the Tennessee Department of Environment and Conservation.

NPDES. Acronym for the Federal National Pollution Discharge Elimination System permitting program.

NPDES MS4 Phase II Program. NPDES Municipal Separate Storm Sewer System program focusing on municipalities where the MS4 serves a population less than one hundred thousand.

Permittee. Any person, firm, or any other legal entity to whom a site disturbance, land disturbance, building or other related permit is issued in accordance with City regulations.

Post-construction runoff quality controls. Permanent controls for capturing pollutants in stormwater runoff and for controlling the rate, quantity and volume of discharge as described and defined in the City’s stormwater design manuals.

Priority construction activity. Land disturbance activity and construction activity discharging directly into or immediately upstream of Waters the State recognizes as impaired for siltation, or into or immediately upstream of state-designated high quality waters.

Redevelopment. Any man-made change to improved real estate, including but not limited to, adding buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, or permanent storage of materials (defined as materials of like nature stored in whole or in part for more than six months). Changing the interior of an existing building or other structure without any external change is not considered redevelopment under this chapter. (Note:—Demolition and reconstruction is considered development and not redevelopment.)

Retention. The prevention of storm runoff from direct discharge into receiving waters. Examples include systems which discharge through percolation, exfiltration, filtered bleed-down and evaporation processes.

Right-of-entry. Authority of City personnel or their designee to enter into properties for the purpose of inspecting private drainage systems.

Sediment. Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its place of origin by air, water, or gravity as a product of erosion.

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Sediment Control (SC). Practices implemented to manage through filtering, settling or other mechanism(s) to remove suspended particles (soil, organic or mineral) from water, often associated with erosion prevention and sedimentation control.

Seedling/sapling. A deciduous, native, non-invasive canopy tree with a minimum height of twenty-four inches and minimum caliper of three-eighths (3/8) inches at time of planting. Seedlings/saplings can be bare-root or container grown. All seedling/saplings are to have well developed root systems, to be free of insects and disease as well as mechanical injuries, and in all respects to be suitable for field planting.

Significant redevelopment. Redevelopment as defined herein that has a value greater than fifty percent (50%) of the property's current assessed value; increases the impervious surface area of the property; by 10,000 square feet or more; redirects the flow of stormwater in any way; modifies the storm sewer system; or, is likely to result in additional pollutants to the stormwater characteristics.

Site. All contiguous land and bodies of water in one ownership, graded or proposed for land disturbance or development as a unit, although not necessarily at one time.

Slope. Degree of deviation of a surface from the horizontal, usually expressed in percentage or ratio.

Soil. All unconsolidated mineral and organic material of any origin that overlies bedrock and that can be readily excavated.

Stormwater concept plan. A plan which is defined as showing sufficient information as pertaining to major stormwater elements to allow the City to evaluate the general characteristics and overall stormwater management efforts expected within a proposed development.

Stormwater Coordinator. Term used for the person employed as the City's Stormwater Program Manager.

Stormwater basin or sub-basin master plan. Any study or plan prepared by or accepted by the City that identifies solutions to water quality or quantity problems on a regional basin or sub-basin area.

Stormwater design manuals. Rules or guidelines adopted by the City for handling stormwater in accordance with this ordinance. These include the "Stormwater Planning and Low Impact Design Guide" on stormwater runoff source reduction techniques, the "Stormwater Controls Manual" on stormwater quality runoff treatment and such other documents as are identified as a stormwater design manual. These are generally available on the City's webpage.

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Stormwater management plan. A plan which is defined as including sufficient information to allow the City to evaluate the environmental characteristics of the site, the potential impacts of all proposed development of the site, both present and future, on the water resources, and the effectiveness and acceptability of the measures proposed for managing stormwater runoff generated at the site.

Stream. Waters of the State except for those waters flowing within wet weather conveyances. In the absence of a definitive assessment by the State of Tennessee of whether a watercourse is a stream or a wet-weather conveyance, the following watercourses are considered to be streams:

- (A) watercourses serving drainage areas of one hundred acres or more, provided that the watercourse existed prior to the development under consideration for application of the water quality protection area;
- (B) watercourses known to flow regularly after seven days of dry weather (e.g., spring-fed surface water);
- (C) watercourses identified as a dashed blue line on the USGS map; and
- (D) watercourses identified as a continuous blue line on the USGS map.

The City may conclude, subject to review by the State, that a watercourse or segment of watercourse is not a stream, based on a review of field data assessing its geomorphology, hydrology and biology.

Stream bank protection volume or SPv. A volume of stormwater runoff that must be detained on site for an extended period of time for the purpose of reducing the frequency of bank-full flow conditions in downstream channels.

Stripping. Any activity that removes or significantly disturbs the vegetative surface cover, including clearing and grubbing operations.

Structure. Anything constructed or erected, the use of which requires a more or less permanent location on or in the ground. Such construction includes but is not limited to objects such as buildings, towers, smokestacks, overhead transmission lines, carports, and walls.

Structure, permanent. A structure which is built of such materials and in such a way that it would commonly be expected to last and remain useful for a substantial period of time.

Structure, temporary. A structure which is built of such materials and in such a way that it would commonly be expected to have a relatively short useful life, or is built for a purpose that would commonly be expected to be relatively short-term.

Top of bank. The landward edge of the active channel.

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Total suspended solids or TSS. The quantity of suspended solid materials in a sample of water as defined by: "Standard Methods," Method 2540 D, "Total Suspended Solids Dried at 103° - 105° C," American Public Health Association, American Water Works Association, and Water Pollution Control Federation, 1995, or latest edition.

Treatment train. A term used to refer to a series of stormwater quality controls which in series provide greater stormwater pollutant reduction (treatment) than a single control.

USGS Map. The most recent 7.5 minute series (topographic) map for the location under consideration.

Watercourse. A channel, natural depression, slough, gulch, stream, creek, pond, reservoir, or lake in which storm runoff and flood water flows either regularly or infrequently. This includes major drainage ways for carrying urban storm runoff.

Waters of the State. Any watercourse determined to be in the jurisdiction of the Tennessee Department of Environment and Conservation (TDEC). Waters of the State are separate and distinct from an MS4 and private infrastructure. Waters of the State or simply waters means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine to effect a junction with natural surface or underground waters.

Water Quality Protection Area (WQPA). Undisturbed vegetation, including trees, shrubs and herbaceous vegetation; enhanced or restored vegetation; or the reestablishment of vegetation bordering streams, ponds, wetlands, reservoirs or lakes, which exists or is established to protect those bodies of water.

Water quality volume (WQv). The storage needed to capture and treat 90% of the average annual stormwater runoff volume. In the unit of acre-feet, $WQv = (P)(Rv)(A/12)$, where P is the 90th percentile Murfreesboro rain event in inches (1.2 inches), Rv is a coefficient that depends on the amount of impervious surface on a property and A is the area in acres.

Wetland. Those areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typical to life in saturated soil conditions. Wetlands generally include, but are not limited to, swamps, marshes, bogs and similar areas.

Wet weather conveyances. Man-made or natural watercourses, including natural watercourses that have been modified by channelization, that flow only in direct response to precipitation runoff in their immediate locality and whose channels are above the groundwater

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table and which do not support fish and aquatic life and are not suitable for drinking water supplies.

[Ord. No. 88-60 §2, 12-15-88; Ord. No. 04-O-69 §2, 12-09-04; Ord. No. 06-O-27 §§1–3, 03-08-07]

SECTION 27 $\frac{1}{2}$ -3 AUTHORITY.

- (A) *Jurisdiction.* The Stormwater Management Ordinance shall govern all properties within the corporate limits of the City and any development outside the City subject to its development standards.
- (B) *Administering entities.* The Murfreesboro Water and Sewer Department (MWSD), the Planning and Engineering Department and the Building and Codes Department shall administer the provisions of this chapter.
- (1) The Director of MWSD, with concurrence of the City Engineer and with the approval of the City Council, shall establish written regulations and technical guidelines as may be necessary to enforce the terms of this chapter. These regulations shall be filed in the office of the City Recorder.
 - (2) The Director of MWSD and the City Engineer shall have the authority to prepare, or have prepared, stormwater master plans for developments or drainage basins, and such details as may be needed to carry out said stormwater master plans.
 - (3) The Director of MWSD, the City Engineer, the Planning Director, and the Building and Codes Director, or their designee shall have the authority to inspect private drainage systems within the City, and to order such corrective actions to said private drainage systems as are necessary to maintain properly the drainage systems within the City.
- (C) *Right-of-entry.*
- (1) Designated City staff shall have right-of-entry on or upon the property of any person subject to this chapter and any permit/document issued hereunder. The City staff shall be provided ready access to all parts of the premises for the purposes of inspection, monitoring, sampling, inventory, records examination and copying, and the performance of any other duties necessary to determine compliance with this chapter.
 - (2) Where a property, site or facility has security measures in force which require proper identification and clearance before entry into its premises, the person shall make necessary arrangements with its security personnel so that, upon presentation of suitable identification, the designated City staff will be permitted to enter without delay for the purposes of performing specific responsibilities.
 - (3) Designated City staff shall have the right to set up on the person's property such devices as are necessary to conduct sampling and/or metering of the person's stormwater operations or discharges.
 - (4) Any temporary or permanent obstruction to safe and easy access to the areas to be inspected and/or monitored shall be removed promptly by the person at the written or verbal request of the designated City staff. The costs of clearing such access shall be borne by the person.
 - (5) The Director of MWSD, the City Engineer, the Planning Director, or the Building and Codes Director or their designee may inspect the facilities of any owner or occupant in order to ensure compliance with this chapter. Such inspection shall be made with the

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consent of the owner or occupant. If such consent is refused, denied or not promptly addressed, the designated City staff may seek issuance of an administrative search warrant.

- (6) The City has the right to determine and impose inspection schedules necessary to enforce the provisions of this chapter. Inspections may include, but are not limited to, the following:
- (a) An initial inspection prior to stormwater management plan approval;
 - (b) Erosion control inspections as necessary to ensure effective control of erosion and sedimentation;
 - (c) A bury inspection prior to burial of any underground drainage structure;
 - (d) A finish inspection when all work, including installation of storm management facilities, has been completed;
 - (e) Inspections for the City to determine whether the property owner is in compliance with a stormwater maintenance agreement; and,
 - (e) Inspections necessary for the City to determine whether or not violations of this chapter exist at a property (e.g., when the City receives a complaint that necessitates investigation of a potential violation of this chapter).

[Ord. No. 88-60 §3, 12-15-88; Ord. No. 04-O-69 §3, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27½-4 APPEALS.

- (A) Whenever the Director of MWSD, the City Engineer, the Planning Director, or the Building and Codes Director or their designee shall reject or refuse to approve a plan for noncompliance with this ~~chapter~~Article I, or find a violation of this ~~chapter~~Article I other than an illicit discharge as specified in Section 27½-13, the owner or the owner's authorized agent may file an appeal from the decision to the Board.
- (B) An appeal arising under Section 27½-13 Illicit Discharges shall be made to the Director of MWSD and the MWSD under the procedures applicable to that body.
- (C) The basis for an appeal shall be a claim that one or more of the following conditions exists.
- (1) The true intent and meaning of this ~~chapter~~Article I or any of the regulations or guidelines legally adopted thereunder have been incorrectly interpreted; or
 - (2) The provisions of this ~~chapter~~Article I or the regulations or guidelines hereunder do not apply.
- (D) An owner, or the owner's authorized agent, who is affected by a decision, determination, order or notice issued by the City, has a right to appeal to the Board, provided that a written and complete application is filed within twenty days after the day the order or notice was served.
- (E) The hearing procedures shall follow the rules and regulations of the Board.
- (F) The fee for filing an appeal shall be set by the City Council.

[Ord. No. 88-60 §4, 12-15-88; Ord. No. 04-O-69 §4, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27¹/₂-5 LAND DISTURBANCE PERMITS.

(A) *Land disturbance permit.*

- (1) A land disturbance permit shall be required from the City in the following circumstances:
 - (a) Land disturbing activity disturbs one or more acres of land;
 - (b) Land disturbing activity of less than one acre of land if such activity is part of a larger common plan of development that affects one or more acres of land; see exception in (2) below; or
 - (c) Land disturbing activity of less than one acre of land, if in the opinion of the City, such activity poses a unique threat to water, or to public health or safety.
- (2) Construction of an individual one or two-family dwelling, or additions or modifications thereto, shall not require issuance of a separate land disturbance permit; compliance with the terms and conditions of a City building permit shall be sufficient to comply with the permitting requirements of this chapter, provided the activity does not pose a unique threat as specified in (A)(1)(c) above. (Note: the State's requirement for issuance of a State permit for disturbance of one acre or more of land is not waived by this provision, nor does this exception excuse the developer from obtaining the land disturbance permit.)
- (3) Construction of a structure on less than one acre of land shall not require issuance of a land disturbance permit; compliance with the terms and conditions of a City building permit shall be sufficient to comply with the permitting requirements of this chapter, provided the activity does not pose a unique threat as specified in (A)(1)(c) above.

(B) *Building permit.* If a land disturbance permit is required, no building permit shall be issued until the applicant has obtained a land disturbance permit where required by this chapter.

(C) *Land disturbance permit not required.* The following activities do not require a land disturbance permit:

- (1) Any emergency activity that is immediately necessary for the protection of life, property, or natural resources is temporarily exempt. A land disturbance permit will be required to be obtained within thirty days of emergency activity.
- (2) Existing nursery and agricultural operations conducted as a permitted principal or accessory use; not included in this exemption is a land disturbance activity for construction of structures and parking areas.
- (3) Any logging or agricultural activity that is consistent with an approved farm conservation plan or a timber management plan prepared or approved by the regulating agency.

(D) *Application for a land disturbance permit.*

- (1) Each application shall include the following:
 - (a) Name of applicant;
 - (b) Business or residence address of applicant;
 - (c) Name, address, telephone number(s) and e-mail address of the owner of the property of record in the office of the Register of Deeds;
 - (d) Address and legal description of subject property including the tax reference number and parcel number of the subject property;
 - (e) Name, address, telephone number and email address of the contractor and any subcontractor(s) who shall perform the land disturbing activity and who shall implement the erosion prevention and sediment control plan;

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- (f) A statement indicating the nature, extent and purpose of the land disturbing activity including the size of the area for which the permit shall be applicable and a schedule for the starting and completion dates of the land disturbing activity;
 - (g) In the event a sinkhole is located on the property, the applicant shall obtain appropriate permits from the Tennessee Department of Environment and Conservation;
 - (h) In the event a wetland is located on the property, the applicant shall obtain appropriate permits from the Tennessee Department of Environment and Conservation;
 - (i) The applicant shall obtain from any other state or federal agency any other appropriate environmental permits that pertain to the property. However, the inclusion of those permits in the application shall not foreclose the City from imposing additional requirements and conditions, commensurate with this chapter, on the development of property covered by those permits; and,
 - (j) A copy of notice of intent submitted to the Tennessee Department of Environment and Conservation for coverage under its NPDES construction site runoff general permit.
- (2) Each land disturbance permit application shall be categorized as one of the four identified activities:
- (a) *Land disturbance activity WITH intent to build and WITH construction of public infrastructure.* Prior to submitting an application for a land disturbance permit for this category of land disturbance activity, an applicant shall submit:
 - [1] Stormwater concept plan;
 - [2] Stormwater management plan; and,
 - [3] Erosion prevention and sediment control plan.
 - (b) *Land disturbance activity WITHOUT intent to build and WITH construction of public infrastructure.* Prior to submitting an application for a land disturbance permit for this category of land disturbance activity, an applicant shall submit:
 - [1] Stormwater management plan; and,
 - [2] Erosion prevention and sediment control plan.
 - (c) *Land disturbance activity WITH intent to build and WITHOUT construction of public infrastructure.* Prior to submitting an application for a land disturbance permit for this category of land disturbance activity, an applicant shall submit an erosion prevention and sediment control plan.
 - (d) *Land disturbance activity WITHOUT intent to build and WITHOUT construction of public infrastructure.* Prior to submitting an application for a land disturbance permit for this category of land disturbance activity, an applicant shall submit an erosion prevention and sediment control plan.
- (3) Any applicant required under preceding section to submit a stormwater concept plan or a stormwater management plan may request that the plan(s) not be required and the City shall have discretion to grant or deny such requests. At the discretion of the City, any applicant may be required to submit a stormwater concept plan and a stormwater management plan as part of the land disturbance permit application. No land disturbance permit shall be issued until all plans are approved by the City.

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- (4) Each application for a land disturbance permit shall be accompanied by payment of a land disturbance permit fee, and any stormwater management fee, which permit and fee amount shall be set by the City Council.
- (E) *Review and approval of application.*
- (1) After receiving a completed application, the City will review each application for a land disturbance permit to determine its conformance with the provisions of this chapter. Following review and approval by the Stormwater Coordinator and the Engineering Department, the Building and Codes Department shall provide one of the following responses in writing:
 - (a) Approval of the permit application as submitted;
 - (b) Approval of the permit application, subject to such conditions as may be necessary to secure substantially the objectives of this chapter, and issuance of the permit subject to these conditions;
 - (c) Denial of the permit application, indicating the reason(s) for the denial; or
 - (d) A request for additional information.
 - (2) If the City has granted conditional approval of the permit, the applicant shall submit a revised plan that conforms to the conditions established by the City. However, the applicant shall be allowed to proceed with the land disturbing activity so long as it conforms to conditions established by the City.
 - (3) No construction plans for infrastructure will be released by the City Engineer nor will building permits be issued by the Chief Building Officer until the land disturbance permit has been approved.
 - (4) For any priority construction activity, the City and applicant shall conduct a pre-construction meeting prior to issuance of a land disturbance permit.
- (F) *Permit duration.* Every land disturbance permit shall expire and become null and void if substantial work authorized by such permit has not commenced within one hundred eighty calendar days of issuance, or is not complete within eighteen months from the date of the commencement of construction. Land disturbing activity with no intent to build shall require renewal every six months.
- (G) *Notice of land disturbing activity.* The permittee must provide written notification to the Stormwater Coordinator ten working days in advance of the commencement of grading or construction.
- (H) *Inspections of land disturbing activities to be performed by the permittee.*
- (1) The permittee shall conduct and record regular inspections of erosion prevention and sediment control (EP&SC) BMP's, for the purpose of preventing erosion and transport of sediment off the property into the stormwater drainage system and into Waters of the State.
 - ~~(2) The permittee shall perform inspections according to the following schedule:~~
 - ~~(a) Before anticipated storm events (or series of storm events such as intermittent showers over one or more days), and within twenty-four hours after the end of a storm event of 0.5 inches or greater, and at least once every fourteen calendar days. Where sites have been finally or temporarily stabilized, or runoff is unlikely due to winter conditions (e.g. site covered with snow, ice, or frozen ground), such inspection only has to be conducted once per month.~~
 - ~~(b) For discharges from priority construction activity, before anticipated storm events (or series of storm events such as intermittent showers over one or more days), within~~

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~~twenty-four hours after the end of a storm event of 0.5 inches or greater, and at least once per week.~~

~~(c) Inspections and associated, necessary repairs done 60 hours before a rain event constitute compliance with "before anticipated storm events," and inspections and repairs on the Friday before, and the Monday after, meet the requirement for rain events over the weekend.~~

(23)——Inspections to fulfill the minimum-~~frequency~~ requirements ~~above~~ shall meet the criteria set forth in the Tennessee Department of Environment and Conservation (TDEC) construction activity runoff general permit, and as in the City's erosion and sediment control BMP manual.

(34)——The inspections and records shall include, but not be limited to, the following:

- (a) The date and location of the inspection;
- (b) Any repairs and/or remedies undertaken on EP&SC BMP's;
- (c) Whether construction is in compliance with the approved plans;
- (d) Variations from the approved construction plans or specifications; and,
- (e) Any violations that exist.

Records of inspections shall be made available to the City.

(45)——The permittee shall be responsible for the following:

- (a) Certification of record drawings; and,
- (b) Investigating any claimed violations identified by the City.

(I) *Inspections to be performed by the City.*

- (1) The City shall make inspections of land disturbing activity to verify compliance with this chapter at its discretion.
- (2) The City shall inspect priority construction activities as frequently as required by State and Federal regulations and NPDES permit requirements.

(J) *Performance bonds.*

- (1) The City may, at its discretion, require the submittal of a performance security or performance bond prior to issuance of a permit in order to ensure that the stormwater conveyance systems and erosion prevention and sediment controls are installed and maintained by the permit holder as required by the approved plan(s) or by this chapter. The amount of the installation performance security or performance bond shall be the total estimated construction cost of the conveyance systems and the erosion prevention and sediment controls approved under the permit, plus any reasonably foreseeable additional related costs; e.g. additional stabilization costs if the systems or controls are not installed. The performance security shall contain forfeiture provisions for failure to complete work specified in the plan(s). The applicant shall provide an itemized construction cost estimate complete with unit prices which shall be subject to acceptance, amendment or rejection by the City. Alternatively, the City shall have the right to substitute its own calculations for a construction cost estimate.
- (2) The performance security or performance bond shall be released in full only upon submission of record drawings and written certification by a registered professional engineer licensed to practice in Tennessee that the systems and controls have been installed in accordance with the approved plan and other applicable provisions of the permit and this chapter. The City will make a final inspection of the systems or controls to ensure that they are in compliance with the approved plan(s) and the provisions of this chapter. Provisions for a partial pro-rata release of the performance security or

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performance bond based on the completion of various development stages can be made at the discretion of the City.

[Ord. No. 88-60 §5, 12-15-88; Ord. No. 04-O-69 §5, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27¹/₂-6 WAIVERS.

- (A) *General.* Every applicant shall provide for stormwater management as required by this chapter, unless a written request to waive this requirement is filed and granted.
- (B) *Conditions for waiver.* The minimum requirements for stormwater management may be waived in whole or in part upon written request of the applicant, provided that at least one of the following conditions applies:
- (1) It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this chapter and compliance with the requirements may create a risk to public safety or to private property (eg. risk of flooding by adding on site detention to redevelopment project). Risk or a significant hardship (other than cost of compliance) is a prerequisite for a waiver. The standards for granting a waiver may be less restrictive, and the extent of the waiver may be greater, for redevelopment than development.
 - (2) Provisions are made to manage stormwater by an off-site facility. The off-site facility must be in place and designed to provide the level of stormwater control that is equal to or greater than that which would be afforded by on-site practices. Further, the facility must be operated and maintained by an entity that is legally obligated to continue the operation and maintenance of the facility.
- (C) *Downstream damage, etc., prohibited.* In order to receive a waiver, the applicant must demonstrate to the satisfaction of the City that the waiver will not lead to any of the following conditions downstream:
- (1) Deterioration of existing culverts, bridges, dams, and other structures;
 - (2) Degradation of biological functions or habitat;
 - (3) Accelerated ~~streambank~~stream bank or streambed erosion or siltation; or
 - (4) Increased threat of flood damage to public health, life or property.
- (D) *A land disturbance permit not to be issued where waiver requested.* No land disturbance permit shall be issued where a waiver has been requested until the waiver is granted. If no waiver is granted, the plans must be resubmitted with the required plans.
- (E) *Grant of waiver.* If the waiver request is recommended by City staff, a simple majority vote of the Board in favor of granting the waiver shall be sufficient. If the waiver request is not recommended in whole or in part by City staff, a two-thirds vote of the Board shall be required to grant the waiver to which staff objection is made.

[Ord. No. 88-60 §6, 12-15-88; Ord. No. 04-O-69 §6, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27¹/₂-7 STORMWATER PLANNING AND DESIGN STANDARDS.

- (A) *Minimum control requirements.*

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- (1) *BMP manual.* The City adopts as its Best Management Practices (BMP) manual for erosion and sediment control the TDEC Erosion Prevention and Sediment Control Handbook, as amended, which is incorporated by reference in this chapter as if fully set out herein. This manual includes a list of acceptable BMP's including specific design performance criteria and operation and maintenance requirements for each stormwater practice. The erosion and sediment control manual may be updated and expanded from time to time, at the discretion of the City Council, upon the recommendation of the Director of MWSD, based on improvements in engineering, science, monitory and local maintenance experience. Stormwater facilities that are designed, constructed and maintained in accordance with these BMP criteria will be presumed to meet the minimum water quality performance standards.
 - (2) *Stormwater design manuals.* The City adopts as its BMP manual its own stormwater design manuals for permanent shall adopt minimum design guidelines to fulfill the purpose of stormwater management. These manuals include the "Stormwater Planning and Low Impact Design Guide" for stormwater runoff source reduction techniques and the "Stormwater Controls Manual" for stormwater quality runoff treatments. These may be updated and expanded from time to time, at the discretion of the City Council, The City Council must approve any change to a stormwater design manual which imposes a new general requirement or which allows a new credit to the stormwater utility fee. Changes shall be based upon the recommendation of the Director of MWSD, based on improvements in engineering, science, monitory and local maintenance experience. City Council approval of proprietary systems shall not be required. Stormwater facilities that are designed, constructed and maintained in accordance with this a stormwater design manual will be presumed to meet minimum performance standards.
- (B) *General performance criteria for stormwater management.* Unless granted a waiver under Section 27 ½ - 6 or determined by the City to be exempt, the following minimum performance criteria shall be addressed for stormwater management at all sites:
- (1) All site designs shall control the peak flow rates of stormwater discharge to associated with design storms specified by the City and reduce the generation of post construction stormwater runoff to pre-construction levels as specified in subsection (G). Exceptions to this requirement may be, but shall not be limited to, when the project drains into a permanent, continuous stream, when the project drains into an easement where sufficient capacity exists and when the project drains onto a property where a consent for drainage has been granted. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.
 - (2) To protect stream channels from degradation, specific channel protection criteria shall be provided as specified in subsection (G). prescribed in the BMP manual.
 - (3) Stormwater discharges to critical areas with sensitive resources (e.g., recharge areas, water supply reservoirs) may be subject to additional performance criteria, or may need to utilize or restrict certain stormwater management practices.
 - (4) Stormwater discharges from hot spots may require the application of specific structural BMP's and pollution prevention practices.

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- (5) Prior to or during the site design process, applicants for land disturbance permits should consult with the MWSD to determine if they are subject to additional stormwater design requirements.
 - (6) The calculations for determining peak flows as found in ~~the~~a stormwater design manual shall be used for sizing all stormwater facilities.
 - (7) The requirements as defined in BMP manual and ~~or~~ stormwater design manuals as approved and adopted by the City.
- (C) *Stormwater concept plan requirements.* The stormwater concept plan shall contain major stormwater elements with sufficient information to allow the City to evaluate the general characteristics and overall stormwater management efforts expected with the land disturbance of the project Site. To accomplish this goal the concept plan shall include the following:
- (1) GIS/mapping contours;
 - (2) Storm drainage flow arrows;
 - (3) Potential ~~Location~~ of major stormwater structures;
 - (4) Potential ~~Location~~ of detention/retention areas;
 - (5) Location of natural/enhanced holding areas (including known sinkholes & wetlands);
 - (6) Potential ~~Location~~ of major erosion/sediment control basins, etc.;
 - (7) Ultimate drainage outfall; ~~and~~;
 - (8) Location of ~~FEMA-regulated~~all streams, with a designation of those which are FEMA regulated, and designated floodways; and;
 - (9) Potential location of water quality protection areas.
- The stormwater concept plan information shall be submitted with the master plan for the development. The information may be contained in the master plan or submitted separately.
- (D) *Stormwater management plan requirements.* The stormwater management plan shall include sufficient information to allow the City to evaluate the environmental characteristics of the project site, the potential impacts of all proposed development of the site, both present and future, on the water resources, and the effectiveness and acceptability of the measures proposed for managing stormwater generated at the project site. The stormwater management plan shall be submitted for review and approval as part of the site plan and/or construction plans. To accomplish this goal the stormwater management plan shall include the following:
- (1) *Topographic base map.* A topographic base map of an appropriate scale of the site which extends a minimum of one hundred feet beyond the limits of the proposed development and indicates:
 - (a) Existing surface water drainage including streams, ponds, culverts, ditches, sink holes, wetlands; and the type, size, elevation, etc., of nearest upstream and downstream drainage structures;
 - (b) Current land use including all existing structures, locations of utilities, roads, and easements;
 - (c) All other existing significant natural and artificial features;
 - (d) Proposed surface area tabulation showing the percentage of the different surfacing types (i.e., lawn, asphalt, concrete, etc.); drainage patterns; locations of utilities, roads and easements; the limits of clearing and land disturbance activity; and,
 - (e) Proposed structural BMP's.

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- (2) *Calculations.* Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the ~~design two, five, ten, twenty five, fifty and one hundred year~~ storms must be submitted, specified in the BMP manual. These calculations must show that the proposed stormwater management measures are capable of controlling runoff from the site in compliance with this chapter and the guidelines of the BMP and stormwater design manuals. Such calculations shall include:
- (a) A description of the design storm frequency, duration, and intensity where applicable;
 - (b) Time of concentration;
 - (c) Soil curve numbers or runoff coefficients including assumed soil moisture conditions;
 - (d) Peak runoff rates and total runoff volumes for each watershed area; these rates shall be based upon built-out conditions;
 - (e) Infiltration rates, where applicable;
 - (f) Culvert, stormwater sewer, ditch and/or other stormwater conveyance capacities;
 - (g) Flow velocities;
 - (h) Data on the increase in rate and volume of runoff for the design storms ~~referenced in the BMP manual~~;
 - (i) Documentation of sources for all computation methods and field test results; and,
 - (j) For BMP's or stormwater facilities not described by the BMP and stormwater design manuals, include design parameters and specifications.
- (3) *Soils information.* If a stormwater management control measure depends on the hydrologic properties of soils (e.g., infiltration basins), then a soils report shall be submitted. The soils report shall be based on on-site boring logs or soil pit profiles and soil survey reports. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the control measure.
- (4) *Maintenance and repair plan.* The design and planning of all stormwater management facilities shall include detailed maintenance and repair procedures to ensure their continued performance. These plans will identify the parts or components of a stormwater management facility that need to be maintained and the equipment and skills or training necessary. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan. The plan may, at City's option, require the owner to file periodic inspection reports or certification that the required maintenance and repairs have been performed and that the facility is functioning as initially designed and installed. A location map of all stormwater management BMP's with a A-permanent elevation benchmark shall be identified in the plans submitted to assist in the periodic inspection of the facility.
- (5) *Maintenance easements.* The applicant must ensure access to the site for the purpose of inspection and repair by securing all the maintenance easements needed. These easements must be binding on the current property owner and all subsequent owners of the property and must be properly recorded in the office of the Register of Deeds.
- (6) *Maintenance Agreement.*
- (a) The maintenance responsibilities for permanent stormwater runoff control facilities shall be determined based upon the type of ownership of the property which is controlled by the facilities.

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- (b) Where the permanent stormwater runoff control facilities are designed to manage runoff from property in a single entity ownership as defined below, the maintenance responsibility for the stormwater control facilities shall be with the single entity owner.
 - (c) The stated responsibilities of the entity in terms of owning and maintaining the facilities shall be submitted with the stormwater management plan for determination of their adequacy. Approval of the stormwater management plan shall be conditioned upon the approval of these terms. These terms shall be in writing, shall be in recordable form, and shall, in addition to any other terms deemed necessary by the City, and shall contain a provision permitting inspection at any reasonable time by the City.
 - (d) A single entity shall be defined as an individual, an association, public or private corporation, partnership firm, trust, estate or any other legal entity allowed to own real estate.
 - ~~(e) Upon approval of the stormwater management plan by the City, the owner shall demonstrate the financial resources necessary for long term maintenance requirements. The funding mechanism shall be in a form approved by the Stormwater Coordinator. The Coordinator will only approve funding mechanism(s) for long term maintenance responsibilities that can be demonstrated to be permanent or transferable to another entity with equivalent longevity.~~
 - (ef) Unless made specifically clear in the preliminary stages of the stormwater management plan review, it will be assumed that all stormwater detention, retention, treatment or storage facilities and/or devices shall be operated and maintained by a single entity as defined above.
 - (fg) Where the City has explicitly and in writing accepted an offer of dedication of the permanent stormwater management facilities, the City shall be responsible for maintenance.
- (7) *Erosion prevention and sediment control plans.* The applicant must include an erosion prevention and sediment control plan for all construction activities which meet the requirements of subsection (E).
- (E) *Erosion prevention and sediment control plan requirements.* The erosion prevention and sediment control plan shall accurately describe the potential for soil erosion and sedimentation problems resulting from land disturbing activity and shall explain and illustrate the measures that are to be taken to control these problems. The length and complexity of the plan is to be commensurate with the size of the project, severity of the site condition, and potential for off-site damage. The plan shall be certified by a registered professional engineer licensed in the State of Tennessee, a Certified Professional in Erosion and Sediment Control (CPESC), or person who has satisfactorily completed the TDEC/UT – sponsored Level I (Fundamentals) and Level II (Design) Erosion Prevention and Sediment Control classes. The plan shall also conform to the requirements found in the BMP manual, and shall include at least the following:
- (1) A brief description of the intended project and proposed land disturbing activity including number of units and structures to be constructed and infrastructure required.
 - (2) A topographic map with contour intervals of two feet or less showing present conditions and proposed contours resulting from land disturbing activity.

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- (3) All existing drainage ways, including intermittent and wet-weather, including any designated floodways or floodplains.
- (4) A general description of existing land cover. Individual trees and shrubs do not need to be identified.
- (5) Stands of existing trees as they are to be preserved upon project completion, specifying their general location on the property. Differentiation shall be made between existing trees to be preserved, trees to be removed and proposed planted trees. Tree protection measures must be identified, and the diameter of the area involved must also be identified on the plan and shown to scale. Information shall be supplied concerning the proposed destruction of exceptional and historic trees in setbacks and buffer strips, where they exist.
- (6) Approximate limits of proposed clearing, land disturbance and filling.
- (7) Approximate flows of existing stormwater leaving any portion of the site.
- (8) A general description of existing soil types and characteristics and any anticipated soil erosion and sedimentation problems resulting from existing characteristics.
- (9) Location, size and layout of proposed stormwater and sedimentation control improvements.
- (10) Proposed drainage network.
- (11) Proposed drain tile or waterway sizes.
- (12) Approximate flows leaving site after construction and incorporating water run-off mitigation measures. The evaluation must include projected effects on property adjoining the site and on existing drainage facilities and systems. The plan must address the adequacy of outfalls from the development: when water is concentrated, what measures, including infiltration, sheeting into buffers, etc., are going to be used to prevent the scouring of waterways and drainage areas off-site, etc.
- (13) The projected sequence of work represented by the grading, drainage and erosion prevention and sediment control plans as related to other major items of construction, beginning with the initiation of excavation and including the construction of any sediment basins or retention facilities or any other structural BMP's.
- (14) Specific remediation measures to prevent erosion and sedimentation run-off. Plans shall include detailed drawings of all control measures used; stabilization measures including vegetation and non-vegetation measures, both temporary and permanent, will be detailed. Detailed construction notes and a maintenance schedule shall be included for all control measures in the plan.
- (15) Specific details for the construction of rock pads, wash down pads, and settling basins for controlling erosion and sediment loss; road access points; eliminating or keeping soil, sediment, and debris on streets and public ways at a level acceptable to the City.
- (16) Soil, sediment, and debris brought onto streets and public ways must be removed by the end of the work day by machine, broom or shovel to the satisfaction of the City. Failure to remove the soil, sediment, or debris shall be deemed a violation of this chapter. Any material creating hazardous roadway conditions shall require immediate clean-up.
- (17) Proposed structures; location (to the extent possible) and identification of any proposed additional buildings, structures or development on the site.
- (18) A description of any on-site measures to be taken to recharge surface water into the ground water system through infiltration.

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- (19) Erosion prevention and sediment control measures shall be designed to control the rainfall and runoff from a two year, twenty-four hour storm, as a minimum.
- (20) For common drainage locations that serve an area with ten or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a two year, twenty-four hour storm and runoff coefficient from each disturbed acre drained, or equivalent control measures, shall be provided until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing three thousand six hundred cubic feet of storage per acre drained, or equivalent control measures, shall be provided until final stabilization of the site.
- (21) Management practices and controls to prevent waste, including discarded building materials, concrete truck washout, asphaltic concrete mix, chemicals, litter, and sanitary waste, from entering the stormwater drainage system and Waters of the State.

(F) Post-construction runoff quality requirement. The stormwater management plan and controls for all development or redevelopment projects involving one acre or more of land and the construction of 10,000 square feet or more of impervious surface within a two (2) year period must be designed to remove at least 80% of the average annual load of total suspended solids (TSS) in post-construction runoff. The 80% TSS reduction applies to the first 1.2 inches of rainfall. One or more structural controls, as described in the City's stormwater design manuals, may be required to achieve the required result. If this requirement applies to a redevelopment project, it is the area of redevelopment rather than the entire site which must be made compliant.

(1) The stormwater management plan and controls for residential subdivisions may utilize a design alternative to this performance standard. Under this design alternative, a dry extended detention area (pond) may be combined with grass lined channels in a treatment train to achieve a satisfactory post-construction runoff quality treatment level. The length of grass channel required per acre under this design option shall be sized based on the distance from the stormwater discharge outlet to the extended detention pond and on the slope (greater or less than 2%) and the degree of imperviousness (less than 33% or less than 66%) of the grass lined channel as shown below, provided the bottom of the grass lined channel is a minimum of 2 feet wide:

Grass Channel Per Acre Sizing Criteria				
Parameter	< = 33% Imperviousness		Between 34% & 66% Imperviousness	
Slope (max 4%)	< 2%	= or > 2%	< 2%	> 2%
Grass channel minimum length (ft.)	25	40	30	45

(G) Stream bank protection requirement. Stormwater management plan and controls must be designed to prevent erosion of channels and stream banks by controlling peak discharge rates. The stream bank protection volume standard (SPv) must be calculated for each site. Redevelopment compliance shall be based on the area of the site being redeveloped.

(1) Stormwater discharge must be controlled on site so that runoff from a one year, 24 hour storm event (3.11 inches) will be discharged from the site over a 24 hour or greater period of time.

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- (2)Peak discharge rates post-construction may not exceed the pre-construction peak discharge rates for 2 year or 10 year storm events.
- (3)If the site has less than one acre (43,560 square feet) of impervious area, the City will consider on site low impact design features included in a City stormwater design manual as an alternative method of achieving stream bank protection.
- (4)If a hydrologic analysis from an engineer can prove to the satisfaction of the City that neither the post construction runoff from a development site of a one year 24 hour storm event nor the peak discharge from a 2 year or 10 year storm event will impact channel integrity, the City may waive some or all of these area stream bank protection requirements.

[Ord. No. 88-60 §7, 12-15-88; Ord. No. 04-O-69 §7, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27 $\frac{1}{2}$ -8 REVIEW OF BUILDING PERMIT APPLICATIONS AND DEVELOPMENT PLANS.

- (A) No construction, regardless of size, whether by private or public action, shall be performed in such a manner as to materially increase the degree of flooding in its vicinity or in other areas whether by flow restrictions, increased runoff or by diminishing retention capacity.
- (B) The City Engineer shall have the authority to review permit applications filed with the Building Department to determine whether development of a site is likely to have a significant hydrologic impact or materially increase the degree of flooding, and may in such case require stormwater plans. For the purpose of this section, developments that may have a significant hydrologic impact shall include the grading, excavation, clearance or other alteration of the landscape for other than agricultural purposes whether or not a building application has been filed, and whether or not subdivision of the land or construction on the land is contemplated in the near future.

[Ord. No. 04-O-69 §8, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27 $\frac{1}{2}$ -9 FLOODPLAIN REQUIREMENTS.

- (A) *Floodplain regulations.* Uses permitted within the floodplain shall be in accordance with Section 23 of Appendix A–Zoning. The regulations and controls set forth in this section shall be applied within the areas designated on the zoning map or on special overlays thereto which are made a part of this chapter and may be viewed upon request at the Planning Department. However, nothing contained herein shall prohibit the application of the regulations of Section 23 of Appendix A–Zoning to lands which can be demonstrated by competent engineering survey, prepared by a registered Tennessee engineer, using the adopted profiles from which the flood protection elevation is derived, to lie within any

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floodplain, and conversely, any lands which can be demonstrated by competent engineering survey prepared by a registered Tennessee engineer to lie beyond the floodplain shall not be subject to regulations contained in Section 23 of Appendix A—Zoning. Any lands within the areas designated as floodplains on the zoning map or special overlays thereto shall be subject to the regulations and controls pertaining to floodplains as set forth in this chapter.

(B) *Alterations of floodplain land and drainage channels.* No alterations of floodplain land and drainage channels may be made without the written approval of the City Engineer. All applicable requirements of this chapter and, in addition, the following conditions must be met before such approval may be granted:

(1) The construction of a detention or retention basin, levee, earth fill, building or other structure which alters a floodplain area shall only be permitted based on a plan prepared by a registered Tennessee engineer, showing existing and proposed elevations, existing and proposed drainage channels, and existing and proposed structures, and the plan shall be approved by the City Engineer certifying that the alteration and construction as proposed would not materially increase the degree of flooding in other areas, and that any structures proposed to be constructed in the floodplain shall meet the following special conditions:

(a) Notwithstanding any other municipal ordinance or regulation to the contrary, the minimum floor elevation of the lowest floor of any structure intended for human occupancy shall be either equal to the flood protection elevation or floodproofed to one foot above the base flood elevation. All other related facilities thereto such as electrical equipment, water service and sanitary sewer connections shall be either equal to or higher than the base flood elevation or shall be floodproofed to the flood protection elevation; and,

(b) The minimum floor elevation of any structure not intended for human occupancy, as defined, shall be either equal to or higher than the flood protection elevation. floodproofing of structures will only be authorized by the City Engineer as specific individual exceptions to minimum floor elevation requirements where it can be shown that the proposed floodproofing is an acceptable engineering alternative.

(2) The proposed excavation, filling or change of alignment of any existing channel under the jurisdiction of the U.S. Corps of Engineers shall be approved by the Corps of Engineers.

(3) The plan is approved by the Planning Commission taking into account the above conditions as well as any other pertinent factors. Any duly approved alteration of the floodplain will be so noted on the official zoning map as a matter of information.

(4) Any non-permitted drainage system or construction or fill located within a floodplain, shall upon written notice from the City Engineer, be removed at the property owner's expense.

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- (C) *Floodproofing measures.* Floodproofing measures such as the following shall be designed consistent with the flood protection elevation for the particular area, and flood velocities, forces and other factors associated with the flood protection elevation. The City Engineer shall require that the applicant submit a plan or document certified by a registered Tennessee engineer that the floodproofing measures are consistent with the flood protection elevation for the particular area:
- (1) Anchorage to resist flotation and lateral movement;
 - (2) Installation of watertight doors, bulkheads and shutters;
 - (3) Reinforcement of walls to resist water pressures;
 - (4) Use of paints, membranes or mortars to reduce seepage of water through walls;
 - (5) Addition of mass or weight to structures to resist flotation;
 - (6) Installation of pumps to lower water levels in structures;
 - (7) Construction of water supply and waste treatment systems to prevent the entrance of floodwaters;
 - (8) Pumping facilities for subsurface drainage systems for buildings to relieve external foundation wall and basement floor pressures;
 - (9) Construction to resist rupture or collapse, caused by water pressure or flotation debris; and,
 - (10) Cutoff valves on sewer lines or the elimination of gravity flow basement drains.
- (D) *Development within floodways.* No development will be allowed within floodways that would impair their capability to carry and discharge a 100-year flood except where it can be shown by a registered Tennessee engineer that the effect on flood heights is fully offset by stream improvements.
- (E) *Degree of flood protection.* The degree of flood protection intended to be provided by this chapter is considered reasonable for regulatory purposes, and is based on engineering and scientific methods of study. Larger floods may occur on occasions, or the flood height may be increased by man-made or natural causes, such as bridge openings restricted by debris. This chapter does not imply that areas outside floodplain boundaries or land uses permitted within such district will always be totally free from flooding or flood damages. Nor shall this chapter create a liability on the part of, or a cause of action against the City or any officer or employee thereof from any flood damages that may result from implementation of this chapter.
- (F) *Application of Federal Water Pollution Control Act.* Approval by the City does not relieve the developer of obtaining any permits required by Section 404 of the Federal Water Pollution Control Act.

[Ord. No. 04-O-69 §9, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

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SECTION 27½-10 RESPONSIBILITY FOR OFF-SITE DRAINAGE IMPROVEMENTS.

The obtaining of necessary easements in a form approved by the City and the construction and financing of any required off-site drainage improvement necessitated by private development within the watershed shall be the responsibility of the developer.

[Ord. No. 04-O-69 §10, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27½-11 POST CONSTRUCTION REQUIREMENTS.

(A) *Certification by Engineer.* An engineer shall submit a certification that the stormwater system is complete and functional in accordance with the City approved stormwater management plan to the City Engineer for all developments and redevelopments. The certification is required for stormwater systems which are to be publicly owned or maintained and for stormwater systems which are to be privately owned and maintained. No permanent certificate of occupancy for any structure in a development shall be issued until such certification is received. No temporary certificate of occupancy for any structure in a development shall be issued unless work required for completion has been determined, a schedule established and a performance security provided. ~~*Record drawings, final inspections and release of bonds.*~~

~~(1) All applicants for a land disturbance permit who are installing public infrastructure are required to submit actual record drawings for any structures located on-site after final construction is completed. Record drawings shall be prepared by a Tennessee registered land surveyor or engineer and submitted in both a paper and an acceptable digital format. The City shall specify acceptable digital formats and datum for such record drawings.~~

~~(2) A final inspection by the City is required before any performance security or performance bond will be released. The City shall have the discretion to adopt provisions for a partial pro-rata release of the performance security or performance bond on the completion of various stages of development.~~

(B) *Final inspections and release of bonds for public stormwater facilities.* A final inspection by the City will be required before any performance security will be released on a stormwater facility which is or is to become publicly owned or maintained. The City may, but is not required to, provide for partial, pro-rata releases of the performance security based on completion of various stages of development. ~~*Issuance of certificate of occupancy permit.*~~

~~(1) No permanent certificate of occupancy permits shall be issued until corrections to all stormwater management facilities have been made and accepted by the City, or until a suitable bond is posted.~~

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- ~~(2) Prior to the issuance of a certificate of occupancy for any structure within a development, in which the drainage system is to be dedicated to the City, the stormwater management facilities shall be inspected and accepted by the City Engineer.~~
- ~~(3) Prior to the issuance of a certificate of occupancy for any structure in a development, where the stormwater management facilities are to remain private, a registered Tennessee engineer shall submit to the City Engineer a certificate that the drainage system is complete and functional in accordance with the approved plans.~~

(C) *Stabilization requirements.*

- (1) Any area of land from which the natural vegetative cover has been either partially or wholly cleared by development activities shall be revegetated according to a schedule approved by the City. The following criteria shall apply to revegetation efforts:
 - (a) Reseeding must be done with an annual or perennial cover crop accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until such time as the cover crop is established over seventy-five percent (75%) of the seeded area.
 - (b) Replanting with native woody and herbaceous vegetation must be accompanied by placement of mulch or its equivalent of sufficient coverage to control erosion until the plantings are established and are capable of controlling erosion.
 - (c) Any area of revegetation must exhibit survival of a minimum of seventy-five percent (75%) of the cover crop throughout the year immediately following revegetation. Revegetation must be repeated in successive years until the minimum seventy-five percent (75%) survival for one year is achieved.

~~(d) Final stabilization shall be accomplished with permanent cover.~~

(e) Developers shall be required to give a warranty for stabilization vegetation as part of their development agreement and to provide a performance security.

(D) *Inspection of stormwater management facilities.* Periodic inspections of facilities shall be performed as required by the City.

(E) *Failure to meet or maintain maintenance or performance standards.* If a responsible party fails or refuses to meet maintenance or performance standards required under this chapter, the City, after reasonable written notice, may correct violations of the standards by performing all necessary work to place the facility in proper working condition. In the event that the stormwater management facility becomes an immediate danger to public safety or public health, the notice may be oral or omitted. The cost of any action by the City under this section shall be charged to the responsible party.

[Ord. No. 04-O-69 §11, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27½-12 EXISTING LOCATIONS AND DEVELOPMENTS.

(A) *Requirements for all existing locations and developments.* The following requirements shall apply to all sites at which land disturbing activity has occurred prior to the enactment of this chapter:

- (1) Denuded areas must be vegetated or covered under the standards and guidelines specified in the ~~EPSCBMP~~ manual and on a schedule acceptable to the City.
- (2) Cuts and slopes must be properly covered with appropriate vegetation and/or retaining walls constructed.
- (3) Drainage ways shall be properly covered in vegetation or secured with rip-rap, channel lining, etc., to prevent erosion.
- (4) Trash, junk, rubbish, etc., shall be cleared from drainage ways.
- (5) Stormwater runoff shall be controlled to the extent reasonable to prevent pollution of local waters. Such control measures may include, but are not limited to, the following:
 - (a) Ponds
 - [1] Detention pond
 - [2] Extended detention pond
 - [3] Wet pond
 - [4] Alternative storage measures
 - (b) Constructed wetlands
 - (c) Infiltration systems
 - [1] Infiltration/percolation trench
 - [2] Infiltration basin
 - [3] Drainage (recharge) well
 - [4] Porous pavement
 - (d) Filtering systems
 - [1] Catch basin inserts/media filter
 - [2] Sand filter
 - [3] Filter/absorption bed
 - [4] Filter and buffer strips
 - [5] Open channel swale

(B) *Requirements for existing problem locations.* The City shall, as feasible, notify the owners of existing locations and developments in writing of specific drainage, erosion or sediment problem affecting such locations and developments, and the specific actions required to correct those problems. The notice shall also specify a reasonable time for compliance.

(C) *Inspection of existing facilities.* The City may, to the extent authorized by state and federal law, establish inspection programs to verify that all stormwater management facilities, including those built before, as well as those built after, the adoption of this chapter, are functioning within design limits. These inspection programs may be established on any

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reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of the City's NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other BMP's.

- (D) *Corrections of problems subject to appeal.* Corrective measures imposed by the City under this section are subject to appeal ~~of~~under this chapter.

[Ord. No. 04-O-69 §12, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27¹/₂-13 ILLICIT DISCHARGES.

- (A) *Scope.* This section shall apply to all water generated on developed or undeveloped land entering the City's separate storm sewer system.
- (B) *Prohibition of illicit discharges.* No person shall introduce or cause to be introduced into the municipal separate storm sewer system any discharge that is not composed entirely of stormwater. The commencement, conduct or continuance of any non-stormwater discharge to the municipal separate storm sewer system is prohibited except as described as follows:
- (1) Uncontaminated discharges from the following sources:
- (a) Water line flushing or other potable water sources;
 - (b) Landscape irrigation or lawn watering with potable water or repurified water;
 - (c) Diverted stream flows;
 - (d) Rising ground water;
 - (e) Groundwater infiltration to storm drains;
 - (f) Pumped groundwater;
 - (g) Foundation or footing drains;
 - (h) Crawl space pumps;
 - (i) Air conditioning condensation;
 - (j) Springs;
 - (k) Non-commercial washing of vehicles;
 - (l) Natural riparian habitat or wet-land flows;
 - (m) Swimming pools (if dechlorinated - typically less than one PPM chlorine);

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- (n) Fire fighting activities; and,
- (o) Any other uncontaminated water source.
- (2) Discharges specified in writing by the MWSD as being necessary to protect public health and safety.
- (3) Dye testing is an allowable discharge if the MWSD has so specified in writing.
- (C) *Prohibition of illicit connections.*
 - (1) The construction, use, maintenance or continued existence of unlawful connections to the municipal separate storm sewer system is prohibited.
 - (2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
- (D) *Reduction of stormwater pollutants by the use of best management practices.* Any person responsible for a property or premises, which is, or may be, the source of an illicit discharge, may be required to implement, at the person's expense, the BMP's necessary to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section.
- (E) *Notification of spills.* Any person responsible for a property, premises, or activity, which is, or may be, the source of a spill and which is or maybe discharging pollutants to the City's storm sewer system and/or rivers, lakes or streams shall notify the City of such a spill within a reasonable time and in any event within twenty-four hours of knowledge the spill is occurring or has occurred. The notification shall be, at a minimum, to the Fire Department. Notification to the City does not relieve the party of spill notification requirements under federal, state or other local laws, regulations, or rules. For the purpose of this section, a spill is an urgent, one-time, unintentional release of materials such as hazardous substances, hazardous materials, hazardous wastes, chemicals, solid wastes, liquid wastes, sludges, pollutants, contaminants, and other similar substances. On-going, intentional releases of these materials shall not be classified as a spill and may be an illicit discharge.

[Ord. No. 04-O-69 §13, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27½-14 ENFORCEMENT.

- (A) *Enforcement authority.* The City shall have the authority to issue notices of violation and citations, and to impose the civil penalties provided in this section.
- (B) *Notification of violation.*

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- (1) *Written notice.* Whenever the City finds that any permittee or any other person discharging stormwater has violated or is violating this chapter or a permit or order issued hereunder, or a maintenance agreement entered into hereunder the City may serve upon such person written notice of the violation. Within ten days of this notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation.
- (2) *Consent orders.* The City is empowered to enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with the person responsible for the noncompliance. Such orders will include specific action to be taken by the person to correct the noncompliance within a time period also specified by the order. Consent orders shall have the same force and effect as administrative orders issued pursuant to paragraphs (3) and (4) below.
- (3) *Compliance order.* When the City finds that any person has violated or continues to violate this chapter or a permit, ~~or order~~ or maintenance agreement issued thereunder, the City may issue an order to the violator directing that, following a specific time period, adequate structures, devices, be installed or procedures implemented and properly operated. Orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including the construction of appropriate structures, installation of devices, self-monitoring, and management practices.
- (4) *Cease and desist orders.* When the City finds that any person has violated or continues to violate this chapter or any permit, ~~or order~~ or maintenance agreement issued hereunder, the City may issue an order to cease and desist all such violations and direct those persons in noncompliance to:
 - (a) Comply forthwith; or
 - (b) Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and terminating the discharge.
- (5) *Conflicting standards.* Whenever there is a conflict between any standard contained in this chapter and in the BMP or design manual adopted by the City under this chapter, the strictest standard shall prevail.

[Ord. No. 04-O-69 §14, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27½-15 PENALTIES.

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- (A) Any person violating the provisions of this chapter may be assessed a civil penalty by the City of not less than fifty dollars (\$50.00) or more than five thousand dollars (\$5,000.00) per day for each day of violation. Each day of violation shall constitute a separate violation. The City may also recover all damages proximately caused to the City by such violations.
- (B) In assessing a civil penalty, the City may consider:
- (1) The harm done to the public health or the environment;
 - (2) Whether the civil penalty imposed will be a substantial economic deterrent to the illegal activity;
 - (3) The economic benefit gained by the violator;
 - (4) The amount of effort put forth by the violator to remedy this violation;
 - (5) Any unusual or extraordinary enforcement costs incurred by the City;
 - (6) The amount of penalty established by chapter or resolution for specific categories of violations; and,
 - (7) Any equities of the situation that outweigh the benefit of imposing any penalty or damage assessment.
- (C) In addition to the civil penalty in subsection (A) above, the City may recover all damages proximately caused by the violator to the City, which may include any reasonable expenses incurred in investigating violations and enforcing violations of this chapter.
- (D) Any person, company or facility who undertakes any land disturbance activity requiring a stormwater management plan hereunder without first submitting the plan for review and approval shall pay to the City, in addition to any permit or inspection fee, an administrative fee of up to five thousand dollars (\$5,000.00).
- (E) The City may bring legal action to enjoin the continuing violation of this chapter, and the existence of any other remedy, at law or in equity, shall be no defense to any such actions.
- (F) The remedies set forth in this section shall be cumulative, not exclusive, and it shall not be a defense to any action, civil or criminal that one or more of the remedies set forth herein has been sought or granted.

[Ord. No. 04-O-69 §15, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

SECTION 27½-16 SEVERABILITY.

Should any article, section, subsection, clause or provision of this Stormwater Management Ordinance be declared by a court of competent jurisdiction to be unconstitutional or invalid, such decision shall not affect the validity of the chapter as a whole or any part thereof other than the part declared to be unconstitutional or invalid, each article, section clause and provision being declared severable.

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[Ord. No. 04-O-69 §16, 12-09-04; Ord. No. 06-O-27 §1, 03-08-07]

ARTICLE II. WATER QUALITY PROTECTION AREA

SECTION 27½-17 WATER QUALITY PROTECTION AREA.

A water quality protection area (WQPA) is a strip of undisturbed vegetation, either original or reestablished, bordering streams, ponds, wetlands, reservoirs or lakes, which provides:

- (A) A naturally vegetated and pervious buffer between a stream and clearing, grading, filling, paving and building activities of nearby new site development; and
- (B) Protection of stream quality, and resource management benefits.

[Ord. No. 06-O-27 §§4, 5, 03-08-07]

SECTION 27½-18 DEVELOPMENT AND REDEVELOPMENT.